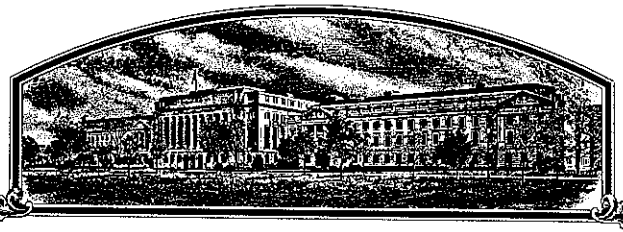
No. 8500140



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Land O' Lakes, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN 'L1771'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 31st day of January in the year of our Lord one thousand nine hundred and eighty-six

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Acting Secretary of Agriculture

APPROVAL EXPIRES 4-30-85

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
WAREHOUSE & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)
Land O'Lakes, Inc.

2. TEMPORARY DESIGNATION

3. VARIETY NAME
L1771

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
R. R. #2
Webster City, Iowa 50595

5. PHONE *(Include area code)*
515-543-4852

FOR OFFICIAL USE ONLY
PVPO NUMBER
8500140

6. GENUS AND SPECIES NAME
Glycine max

7. FAMILY NAME *(Botanical)*
Leguminosae

FILING
DATE 5/6/85
TIME 2:30 ☐ A.M. ☒ P.M.

8. KIND NAME
Soybean

9. DATE OF DETERMINATION
January 1983

FEES RECEIVED
AMOUNT FOR FILING $1,800
DATE 5/6/85
AMOUNT FOR CERTIFICATE $
DATE

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Interregional Farmer Cooperative

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Minnesota

12. DATE OF INCORPORATION
1921

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. Drew Ivers
R. R. 2, Answer Farm
Webster City, Iowa 50595
PHONE *(Include area code)*: 515-543-4852

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. ☒ Exhibit B, Novelty Statement
c. ☒ Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
d. ☐ Exhibit D, Additional Description of the Variety
e. ☒ Exhibit E, Statement of Ownership

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)*
☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ Foundation ☐ Registered ☐ Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
(this is first application for protection)
☐ Yes *(If "Yes," give date)*
☒ No

19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
U.S.A. PILOT SALES FOR TRIAL OBSERVATION OCCURRED DURING WINTER MONTHS OF 1984-85 D/S 5/29/85
☒ Yes *(If "Yes," give names of countries and dates)*
☐ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT D R Ivers — DATE 15 April 85

SIGNATURE OF APPLICANT — DATE

FORM WA-470 (3-84) (Formerly LMGS-470 (8-83) which is obsolete.)

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EXHIBIT A

Origin and Breeding History of the Variety:

1. L1771 is a single plant selection from a BC_3F_2 population of plants from the cross: Max^4 X Altona.

2. L1771 has the same pedigree as L4104 and appeared as a very early segregate while we were developing L4104.

3. MAX was crossed to Altona for the Rps_6 gene in Feb. 1977. The BC_1 thru BC_3 were made during 1977 and 1978 and 250 single BC_3F_2 plants harvested in the greenhouse May 1979. September 1979 two very early segregates among the 250 plant rows were identified from the backcross breeding method, one of which was L1771.

   L1771 was yield tested in 5 reps at one location in 1980 along with other experimentals and checks and yielded 50.0 bu/a vs 53.7 for L4104. L1771 was 17.4 days earlier in that test. L1771 has been yield tested from 1980 thru 1984, with Breeder's Seed production at our research farm during 1983. Foundation seed was produced at the LOL Research Farm in 1984. Certified seed is being produced in 1985 in Iowa and Minnesota.

4. L1771 may have up to 0.1% mechanical mixture of unpreditable identity.

5. L1771 reached genetic stability at the BC_3F_2 generation and is homozygous, homogeneous and void of variants to the best of our knowledge.

EXHIBIT B

L1771 is most similar to the variety L4104 in that it has the same MAX[4] X Altona pedigree and is quite similar in appearance.

L1771 differs from L4104 primarily by maturity:

L1771 Relative Maturity = 17
L4104 Relative Maturity = 37
Approximately 20 days earlier

L1771 is 4.3 days earlier than Corsoy 79 as documented by 53 reps of data from 18 environments over 4 years in Table 1. Whereas L4104 is 1.4 days earlier than Williams 82 as documented by 48 reps of data from 10 environments over 5 years in Table 2. $LSD_{.05}$'s for maturity have been calculated for each variety each year to be approximately 1 day. Combined data across 4 and 5 years would have $LSD_{.05}$'s for less than 1 day.

L1771 differs from L4104 secondarily by plant height which is directly effected by maturity. Documentation is from the same data cited above:

	Height
L1771 (Table 1)	34 (inches)
L4104 (Table 2)	41 (")
Difference	7 (inches)

The combined data across locations and years would reveal an $LSD_{.05}$ for height of less than one inch. Without a doubt, the 7 inch differential is statistically significant.

The comparisons presented for each variety are from the appropriate areas of adaptation rather than a common unadapted area.

With this approach, the maturity and height differences are more realistic. The other approach would result in amplified and exaggerated differences between the two varieties.

TABLE 1. "L1771" 4 YEAR AVERAGE (MG-IIE TESTING)[1/]

ENTRY	YIELD BU/A 1981	1982	1983	1984	$\bar{X}$	MAT. DATE	LDG SCR	HT IN	CHL SCR	PRR 1,3	PRR SCR
L1771	48.6	53.8	44.2*	+48.0	48.5	21.6	1.9	34	2.6	R,R	1.0
HARDIN	52.5*	53.5	42.2	45.5	47.5	23.4	2.4	36	2.7	R	2.8
CORSOY 79	+46.8	+52.0	+41.0	+49.4	47.1	25.9	2.5	39	3.2	R,R	1.1
TEST $\bar{X}$	44.3	52.3	42.0	46.5	46.4	24.8					
TEST $LSD_{.05}$	3.5	2.8	1.8	2.7							
TEST C.V. %	6.9	7.5	6.5	8.0							
[1/]TEST	EL-I	EL-IIE	EL-IIE	EL-IIE							
# REPS	6	15	17	15	53						
# LOC	2	5	6	5	18						
L2330		55.6	43.7	46.0							
L2456		53.9	42.5	47.3							
L4305		51.2	+42.1	44.5							
L1808		54.8	45.8	+47.6							
S1492		54.3	+44.2	48.5							
L1677		55.4	43.3	45.0							
L4404	43.9		44.0	47.4							
L1937			44.2	48.7							

(* 1 LSD ABOVE CORSOY 79)

(DAWSON, WORTHINGTON, A. LEA, CHEROKEE, F. DODGE, WAVERLY)

+MEAN OF DOUBLED ENTRY

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TABLE 2. "4104" "4106" 5 YEAR AVERAGE[1/]

ENTRY	YIELD BU/A 1980	1981	1982	1983	1984	$\bar{X}$	MAT. DATE	LDG SCR	HT IN	CHL SCR	PRR 1,3	PRR SCR
L4106	69.5*	72.9*	57.9	36.2	48.0	53.3	31.9	2.2	41	1.6	R	3.0
L4104	58.3	69.7*	57.1	38.6	50.8*	52.6	30.2	2.3	41	3.3	R,R	1.5
WILLIAMS 82	61.6	67.2	55.1	37.1	47.4	51.0	31.6	2.1	41	3.4	R,R	1.4
TEST $\bar{X}$	58.0	69.2	55.9	37.6	49.8	51.7						
TEST $LSD_{.05}$	5.7	5.1	3.4	2.4	3.1							
TEST C.V. %	8.7	6.6	7.7	8.0	7.8							
[1/] TEST	MGIIIL	ELIII	ELIII	ELIII	ELIII		(* 1 LSD ABOVE WILLIAMS 79)					
# REPS	6	6	12	12	12	48						
# LOC	2	2	2	2	2	10	(PERRY, PELLA)					
A3127		72.2	57.9	42.8*	51.5*							
PELLA				41.8*	53.1*							

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FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

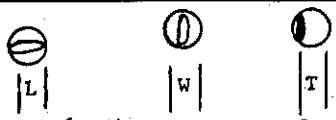
NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Land O'Lakes, Inc.		L1771

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*	FOR OFFICIAL USE ONLY
R. R. 2 Webster City, Iowa 50595	PVPO NUMBER 8500140

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]).

1. SEED SHAPE:

[4]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

2. SEED COAT COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[2] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

4. SEED SIZE: (Mature Seed)

[1][7] Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

6. COTYLEDON COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green

7. SEED PROTEIN PEROXIDASE ACTIVITY:

[0] 1 = Low 2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

[0] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

9. HYPOCOTYL COLOR:

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

10. LEAFLET SHAPE:

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17')
3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton')
3 = Dark Green ('Gnome'; 'Tracy')

13. FLOWER COLOR:

[2] 1 = White 2 = Purple 3 = White with purple throat

14. POD COLOR:

[2] 1 = Tan 2 = Brown 3 = Black

15. PLANT PUBESCENCE COLOR:

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton')
3 = Bushy ('Gnome'; 'Govan')

17. PLANT HABIT:

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

18. MATURITY GROUP:

[0][4] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V
9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

[0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

[0] Bacterial Blight *(Pseudomonas glycinea)*

[0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

[0] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

[0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [0] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

[0] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

[0] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

[2] Race 1 [2] Race 2 [2] Race 3 [2] Race 4 [1] Race 5 [1] Race 6 [1] Race 7

[1] Race 8 [1] Race 9 [2] Other *(Specify)* 10, 12, 14-16, 18-21

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

[0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

[0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

[1] Race 1 [0] Race 2 [1] Race 3 [0] Race 4 [0] Other *(Specify)*

[0] Lance Nematode *(Hoplolaimus Colombus)*

[0] Southern Root Knot Nematode *(Meloidogyne incognita)*

[0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[0] OTHER DISEASE NOT ON FORM *(Specify):*

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[2] Iron Chlorosis on Calcareous Soil

[0] Other *(Specify)* L1771 has a chlorosis rating of 2.6.

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[0] Other *(Specify)*

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	L4104	Seed Coat Luster	L4104
Leaf Shape	"	Seed Size	"
Leaf Color	"	Seed Shape	"
Leaf Size	"	Seedling Pigmentation	"

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
L1771 Submitted	110	1.9	86	7.1	13.2	39.8	20.0	17	3
L4104 Name of Similar Variety	130	2.8	104	7.4	13.5	41.15	21.0	17	3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

EXHIBIT E

Statement of Ownership

L1771 is exclusively owned by Land O'Lakes, Inc. in lieu of the fact that the variety was developed exclusively by the LOL Soybean Breeding Project stationed at the LOL Answer Farm, RR #2, Webster City, Iowa 50595.

L1771 was developed from the cross of MAX^4 X Altona made by Dr. Drew Ivers (LOL Research Geneticist) and under his direction and at LOL expense advanced to and tested as a variety. This variety will be sold by LOL to its farmer-member-owners and the general public with full sales release in 1986.